

NSLS-II REPORT

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Introduction

NSLS-II is a proposed new state-of-the-art medium energy storage ring designed to deliver world leading brightness and flux with top-off operation for constant output. The facility will replace the NSLS, producing x-rays more than 10,000 times brighter than those produced at the NSLS today. The design and engineering is expected to begin in 2007, construction in 2009, and operations in 2014.

The superlative character and combination of capabilities will have broad impact on a wide range of disciplines and scientific initiatives in the coming decades, including new studies of small crystals in structural biology, a wide range of nanometer-resolution probes for nanoscience, coherent imaging of the structure and dynamics of disordered materials, greatly increased applicability of inelastic x-ray scattering, and properties of materials under extreme conditions.

2006 Activities

2006 was an extraordinary year for the NSLS-II Project – challenging, exciting, and full of change and accomplishment.

The NSLS-II Project organization, which was created in January 2006, grew rapidly and by the end of the year a true team of about 100 people were working on the project. Jim Yeck, as Deputy Project Director, brings a wealth of prior experience



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with large DOE and NSF construction projects. We are also very fortunate to have the able leadership of Satoshi Ozaki, John Hill, Marty Fallier, and Diane Hatton, who as Directors of the Accelerator Systems, Experimental Facilities, Conventional Facilities, and Project Support Divisions, respec-



Latest NSLS-II rendering

tively, have guided their development. We are also delighted that Ferdinand Willeke, formerly head of the complex HERA facility at DESY, will be joining the project this coming July to succeed Satoshi Ozaki.

In testimony to BNL's strength as a first-class accelerator laboratory, we have been able to draw on expertise from throughout the laboratory, with staff from NSLS, CAD, SMD, and many other departments contributing to the project. The full-time NSLS-II staff took up residence in the new NSLS-II Project Site Office, Buildings 817 and 830M. These buildings are now full, and we will be expanding into a new building, 817M, in the coming months.

The project also benefited from the continued involvement of the scientific community by hosting visits of from 1 day to several weeks of more than 70 international experts in a variety of disciplines. Additional community involvement occurred through the formation of four external NSLS-II advisory committees, created to guide, and provide oversight to, the project. Altogether, we hosted more than 10 reviews or workshops on a wide range of topics during 2006.

The culmination of these efforts was expressed in the NSLS-II Conceptual Design Report, available on the NSLS-II website, which presents the conceptual design of a world leading facility that will enable the study of material properties and

functions, particularly at the nanoscale, at a level of detail and precision never before possible.

In December, 2006 the project underwent a very successful DOE (“Lehman”) Review. Overall, the committee judged the project team to be strong and to have the full support of BNL and the design as likely to achieve the technical goals.

2007 promises to be equally challenging. In addition to ramping up our R&D program, our current schedule calls for completing Title I, or preliminary engineering, design by the end of this year.

In summary, through the hard work and dedication of an extremely talented community, both inside and outside BNL, we have gotten off to a great start. I look forward to continued future success.